

MICRO-ELECTROMECHANICAL SUB-ASSEMBLY HAVING AN ON-CHIP TRANSFER MECHANISM

Abstract of the Disclosure

[00057] Carriers (10) holding parts (50) for assembling complex MEMS devices are transported to a central assembly location. The parts are stacked in a pre-assigned order and later released from their carriers. Alternatively, they are positioned over the appropriate location and released so as to fall into position as needed. The assembly area (100) includes a cavity below the plane of the carriers such that the parts held within the carrier drop into the cavity. Heating elements are integrated into the cavity to assist in the release of the parts. The cavity is supplied with parts by one or more carriers which are move around by any number of MEMS drive systems (200, 250). The cavity and some of the MEMS assembled therein deliver with precision amounts of materials as required suitable for biomedical applications, or may be processed in-situ, as in an on-chip laboratory.